YONCA AI-Based Daily Farm Planner – Data-Free Prototype for Yonca

ABOUT CHALLENGE OWNER

Digital Umbrella is a leading regional innovation company in agricultural digital transformation. By understanding the real challenges of farm environments, we develop solutions that create both technological and operational value for farmers.

Yonca — one of the country's largest agrarian ecosystem platforms — offers farmers a unified environment for subsidy applications, planting declarations, agro-consulting, crop tracking, market data, and daily farm operation management. The goal is to further expand its functionality by creating an AI prototype that operates without real data, relying only on dummy scenarios, synthetic datasets, and simulation-based inputs. The objective here is not a technical demo, but to shape the next phase of Yonca — a personalized, intelligent farm assistant concept.

CONTEXT

In daily operations — such as irrigation, fertilization, pest management, harvest planning, crop cycles, and subsidy deadlines — farmers often act intuitively. Incorrect decisions can significantly affect productivity and costs.

We are unable to provide real data, as this involves both legal and operational risks. Therefore, this challenge aims for the implementer to

develop an AI engine that functions solely on scenario-based, rule-driven, and synthetic data.

Required outcome: Develop an AI recommendation engine for five or more distinct farm profiles (e.g., planting, livestock, mixed, orchard, etc.), using only dummy data. The model will serve as a conceptual foundation that can later be expanded using real data.

PROBLEM STATEMENT

How might we develop an AI-driven daily farm planning prototype that works exclusively with scenario-based and synthetic datasets, without sharing any real data?

WHAT ARE WE LOOKING FOR?

- An AI-driven recommendation engine for daily farm operations

- Scenario-based advisory logic for irrigation, fertilization, and pest/disease risks

- Synthetic datasets for different farm types

- A simple Azerbaijan-language AI chatbot (intent-based)

- UX mockups + API structure (REST/GraphQL)

- Lightweight model concept for low-connectivity environments

- An architecture that can later be integrated as a plug-in module into the Yonca application

METRICS OF SUCCESS

- A stable prototype working across at least 5 different farm scenarios

- ≥ 90% logical accuracy in the recommendation structure

- Automated generation of a farmer's routine schedule

- Technical compatibility with Yonca UX

- 100% data safety – no real data is used at any stage

POSSIBLE USE CASES

- Irrigation schedule recommendation for a wheat production scenario

- Disease-risk alert for a livestock scenario

- Fertilization calendar generator for an orchard farm

WHAT'S IN IT FOR YOU?

- Opportunity to test an AI concept without sharing real data

- Transition of Yonca to its next functional phase (AI layer)

- Potential long-term collaboration with Digital Umbrella

- Building the technological foundation for future access to a 600K+ farmer ecosystem

EVALUATION CRITERIA

- Model architecture & innovation – 30%
- Recommendation logic accuracy – 25%
- UX compatibility – 20%
- Data-safety principles – 15%
- Team experience – 10%

PRIZE AWARD

1000 AZN

SUBMISSION GUIDELINES AND DEADLINE

- Prototype demo video
- Technical documentation (architecture + logic)
- UX mockups
- Recommendation rule base
- Synthetic dataset samples
- Deadline: 15.03.2026